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AMSAT NEWS SERVICE
ANS-044

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to: ans-editor(a)amsat.org

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ANS-044 AMSAT News Service Weekly Bulletins

To: All RADIO AMATEURS
From: Radio Amateur Satellite Corporation
712 H Street NE, Suite 1653
Washington, DC 20002

DATE 2022 Feb 13

AMSAT Volunteer RF and Mechanical Engineers Needed

AMSAT Engineering is currently recruiting RF and mechanical engineers for its FOX-Plus and GOLF satellite programs.

AMSAT is looking for an EE with RF experience for its FOX-Plus program. You will have the opportunity to design and build the RF communications subsystems for a series of low earth orbit, 1U-3U CubeSats to support AMSAT's educational and engineering objectives. You should have a working knowledge of analog and digital communications protocols (e.g., FM, PSK, FSK) to provide digitally synthesized audio for FM modulated VHF/UHF/SHF voice and telemetry channels. Development opportunities can begin with modification of previous FOX designs and/or by starting with a blank sheet for an original design.

AMSAT is looking for Mechanical Engineers to join its FOX-Plus and GOLF CubeSat teams. You will have the opportunity to use your structural design and analysis skills in the development of a series of low earth orbit and highly elliptical orbit, 1U-3U CubeSats to support AMSAT's educational and engineering objectives. Your contribution may include a) the development of the spaceframe and deployable solar panel subsystem, b) the analysis of the thermal characteristics of the CubeSat and the design of the thermal management system, c) preparation and oversight of the environmental testing procedure, and/or d) management of documentation of the CubeSats adherence to the launch provider's and space vehicle owner's specifications.

You will collaborate with AMSAT's all-volunteer teams of up to 12 electrical, mechanical, software and systems engineers. Our volunteers typically spend five hours per week on their project and attend a weekly online update meeting. An Amateur Radio license and CubeSat experience is helpful but not necessary. U.S. citizenship or proof of permanent residency is required.

Interested persons should send an email with their resume/curriculum vitae to:

volunteer (at) amsat (dot) org.

[ANS thanks Jerry Buxton, N0JY, VP Engineering and Jonathan Brandenburg, KF5IDY, Assistant VP Engineering for the above information.]

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Last year, ARRL CEO David Minster, NA2AA, on behalf of ARRL, honored Bruninga with a brick in the ARRL Diamond Club Terrace at ARRL Headquarters. ARRL sent him a letter of appreciation along with a replica of the brick.

Bruninga held a bachelor's degree in electrical engineering from Georgia Tech (Georgia Institute of Technology) and a master's degree in electrical engineering from the Naval Postgraduate School. Bruninga was a 20-year US Navy veteran. Dayton Hamvention® honored him in 1998 with its Technical Excellence Award.

Bruninga authored and co-authored numerous academic papers over the years, and was frequently in demand as a speaker and presenter at amateur radio gatherings.

Survivors include his wife, Elise Albert; daughter, Bethanne Bruninga-Socolar, WE4APR, and son A.J. Bruninga, WA4APR. Arrangements are pending, although his daughter said that a celebratory memorial service will be held this summer in Annapolis, Maryland.

[ANS thanks the ARRL for the above information]

IARU Region 1 Working to Resolve Potential Amateur Interference to Satellite Navigation System

IARU Region 1 (Europe, Africa, the Middle East, and Northern Asia) continues wrangling with the issue of interference potential to GALILEO global navigation satellite system (GNSS) sites in Europe from amateur radio operation in the 1240 - 1300 MHz (23-centimeter) band. Considerable work has gone into documenting an interference case on a single GALILEO channel between a "very local" Italian 23-centimeter repeater and receivers at the nearby European Commission Joint Research Centre in Ispra, where GALILEO applications are developed and tested.

"This one case is often cited as the 'proof' that interference can occur," said Barry Lewis, G4SJH, the chair of IARU Region 1 Spectrum Affairs. As a consequence of this single instance of interference, the IARU has been engaged for several years in defending amateur interests on 23 centimeters. Considerable computer modeling has gone into the effort, in advance of World Radiocommunication Conference 23 (WRC-23).

In 2018, the FCC granted, in part, the European Commission's request for a rules waiver so that non-federal devices in the US may access specific GALILEO signals to augment the US Global Positioning System. The two systems are interoperable and RF compatible. That Order permits access to two GALILEO satellite signals -- the E1 signal in the 1559 - 1591 MHz portion of the 1559 - 1610 MHz Radionavigation-Satellite Service (RNSS) band, and the E5 signal in the 1164 - 1219 MHz portion of the 1164 - 1215 MHz and 1215 - 1240 MHz RNSS bands. The Order does not grant access to the Galileo E6 signal on 1278.750 MHz in the 1260 - 1300 MHz band, which is not allocated for such services in the US. Omitting that channel eliminates any need for US radio amateurs to protect GALILEO receivers from interference.

"The impact of traffic through this very local repeater (12.5 kilometers distant) on three different GALILEO receivers has been documented," Lewis said. "This work suggests that while RNSS receiver bandwidth can have a part to play in enabling coexistence, beyond that nothing has been reported that could help develop any coexistence criteria." IARU Region 1 President Don Beattie, G3BJ, stated last year that IARU does not want the Amateur Service to affect GALILEO system operation in any way.

Lewis said the IARU has provided extensive information regarding amateur applications in the 1240 - 1300 MHz band as well as operational characteristics and data indicating the density of active transmitting stations and the busiest periods when these are most likely to be operational.

"Amateur transmissions virtually anywhere in the band will be co-frequency with the RNSS receivers from one system or another," Lewis said. "It is therefore obvious that any RNSS receiver will be open to any co-frequency amateur transmission, and amateur operators have no way of knowing where or when a RNSS service user is active." Lewis suggests that "some compromises will need be necessary" to develop a co-existence model.

[ANS thanks The ARRL Letter for the above information.]

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Contact was successful on Thursday, February 10, 2022 at 10:00 UTC.

The latest information on the operation mode can be found at
https://www.ariss.org/current-status-of-iss-stations.html

The latest list of frequencies in use can be found at https://www.ariss.org/contact-the-iss.html

[ANS thanks Charlie Sufana, AJ9N, one of the ARISS operation team mentors for the above information]

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meters) Launch Vehicle 0008 (LV0008) launched the ELaNa 41 mission from Florida's Cape Canaveral Space Force Station today, rising off the pad at 2000 GMT. The two-stage LV0008 performed well initially, soaring high into the Florida skies. But something appeared to go wrong about 3 minutes into flight, just after the rocket's first and second stages separated. Footage from a camera onboard the second stage showed the rocket body spinning rather than cruising smoothly toward its intended destination, an orbit with an altitude of 310 miles. Read the full story at https://www.space.com/astra-first-florida-launch-failure-february-2022. [ANS thanks Space.com for the above information.

+ The International Astronomical Union is establishing a new centre to focus the astronomy's response to huge networks of spacecraft being launched into LEO to deliver broadband internet connections from space. Its work will be led by the U.S. National Optical-Infrared Astronomy Research Laboratory (NOIRLab) in Tucson, Arizona; and by the Square Kilometre Array Organisation (SKAO) in Manchester, UK. It will engage with, and encourage, satellite companies to make every effort to minimise the light pollution they are creating. But it will also pursue policy makers around the world to tighten the regulations on what is acceptable behavior in orbit. [ANS thanks BBC.com for the above information.]

+ A video of the Voyager 1 presentation given by radio amateur Daniel Estevez M0HXM/EA4GPZ at the Fosdem 2022 event is now available. Voyager 1 is the furthest spacecraft and the first ever to exit the solar system. Fueled by its radioisotope generators, after more than 40 years of flight it is still sending data about the interstellar medium using its 3.7 metre dish antenna and 8.4 GHz transmitter. In this talk, Daniel reports two adventures regarding the reception of the Voyager 1 signal. Watch the video at https://fosdem.org/2022/schedule/event/radio_voyager1/. [ANS thanks Southgate Amateur Radio News for the above information.]

+ NASA raised concerns about SpaceX's new Starlink satellites, including an increase of the risk of collision in orbit, in a letter to the FCC. The five-page letter was submitted to the FCC Tuesday, February 8, 2022. SpaceX submitted a proposal to the FCC to put 30,000 more Starlink internet satellites into orbit as part of a "Gen 2" Starlink system. There are currently about 1,800 operational Starlink satellites in orbit and there have already been several near-misses in orbit; one study has suggested Starlinks are responsible for half of all close encounters in low-Earth orbit. NASA has "concerns with the potential for a significant increase in the frequency of conjunction events and possible impacts to NASA's science and human spaceflight missions, Read the full story at https://www.space.com/nasa-collision-risk-starlink. {ANS thanks Space.com for the above information.]

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In addition to regular membership, AMSAT offers membership to:

* Societies (a recognized group, clubs or organization).
* Primary and secondary school students are eligible for membership at one-half the standard yearly rate.
* Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status.
* Memberships are available for annual and lifetime terms.

Contact info [at] amsat.org for additional membership information.

73 and remember to help Keep Amateur Radio in Space!

This week's ANS Editor, Frank Karnauskas, N1UW
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